



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of: Affymetrix, Inc. (William A. Lyon, et al.) )  
Application No.: 09/687,932 )  
Filed: October 13, 2000 )  
For: METHODS AND COMPOSITIONS FOR )  
DETECTING SIGNALS IN BINDING ASSAYS )  
Attorney Docket: 04537.017 / 3354 )

**RESPONSE**

Assistant Commissioner for Patents  
Box RESPONSE  
Washington, D.C. 20231

Honorable Assistant Commissioner:

In response to the Office Action (Paper No. 17) dated August 28, 2002, Applicants submit herewith this Response; a copy of the first page of Patent No. 6,203,989; a copy of the Recordation Form and Assignment of this Application; PTO Form 1449 and a \$180 fee; a Petition for a One-Month Extension of Time and a \$110 fee. This paper is intended to be fully responsive to each of the points made by the Examiner in the Office Action.

**AMENDMENTS**

A. In the Title

Please amend the title as shown in Appendix A as an amendment by instruction. A version of the title with markings to show changes made is included in Appendix B. No new matter is presented in the amended title.

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**B. In the Specification**

Please amend the specification as shown in Appendix A as an amendment by instruction. A version of the specification with markings to show changes made is included in Appendix B. No new matter is presented in the amended specification.

## REMARKS

Applicants have addressed each issue in turn and, for clarity, have provided a heading for each issue.

***Continued Examination under 37 CFR 1.114***

Applicants appreciate Examiner's withdrawal of the finality of the previous Office Action pursuant to 37 CFR 1.114. Applicants believe no further response is necessary.

### *Specification*

**A. Title**

Applicants appreciate Examiner's requirement of a new title. Applicants have provided a new title by amendment. Applicants believe the new title to be clearly indicative of the invention to which the claims are directed.

#### **B. Trademarks**

Applicants appreciate Examiner's indication of the need to capitalize trademarks and clarify generic terminology. Applicants have provided the necessary changes through amendment of the specification.

Applicants believe this reply is fully responsive to these paragraphs.

***Claim Rejections – 35 USC 103***

Applicants respectfully traverse the obviousness rejection, pursuant to 103(c) in light of 102(e). Section 103(c) of Title 35, United States Code, states:

“Subject matter developed by another person, which qualifies as prior art only under one or more of subsections (e), (f) and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.”

Applicants respectfully argue that the Goldberg reference, United States Patent No. 6,203,989, is not prior art as the Application and Patent No. 6,203,989 were, at the time the invention was made, commonly owned by Affymetrix, Inc.

Applicants would like to bring to the Examiner’s attention Goldberg *et al.*, EP 0 999 285 A1, published May 10, 2000, as submitted in the attached PTO Form 1449. The Goldberg European Patent publication (EP 0 999 285 A1), like United States Patent No. 6,203,989, discloses methods and compounds for detecting target molecules using specific binding assays that are useful in signal amplification for detection of a target molecule. Both Goldberg references disclose that a variety of labels, including particles, can be used as a means of detection. In the Application, microparticles provide a label for detection and additionally a signal amplification function not disclosed in Goldberg *et al.* or in Brenner (U.S. Patent No. 5,747,255). The Goldberg references additionally disclose a target with a binding ligand, a receptor capable of binding the binding ligand at multiple sites, and an amplification reagent that binds the receptor and also has multiple binding ligands attached allowing for additional receptors to bind to the amplification reagent. The amplification reagent as disclosed in Goldberg is an antibody or a DNA matrix. In the claims of the Application a plurality of anti-receptors is attached to a microparticle. The microparticle allows for a plurality of anti-receptors to bind to a single receptor through the interaction with a single binding ligand. In

Goldberg multiple antibodies may be bound only following individual binding events between an antibody and a receptor.

The amplification reagent of Goldberg is limited to a single level of amplification. The Application, on the other hand, provides an additional level of signal amplification by coupling multiple antibodies together on one microparticle such that the microparticle acts as a scaffolding for multiple functional groups. The microparticle allows a plurality of amplification reagents to be present in a single complex so if one amplification reagent binds a plurality of others will be bound and each amplification reagent can be bound by a labeled compound. The microparticle additionally provides for differential detection by allowing for a plurality of different labels, i.e., one label on the receptor or amplification reagent and another label on the microparticle itself.

### *Conclusion*

Examiner has provided information concerning communication and/or inquiries concerning this case. Applicants appreciate Examiner's willingness to communicate and assistance regarding this case.

In view of the foregoing, and in summary, Applicants believe that all issues and points of the Examiner's Office action have been addressed in a sincere effort to advance prosecution of this Application. Applicants respectfully requests reconsideration and allowance of this Application. Applicant believes this paper to be fully responsive to each of the points made by the Examiner in the Action.

Please debit Deposit Account No. 50-0581 for any other deficiencies if necessary.

Dated this 30<sup>th</sup> day of December 2002.

Respectfully submitted,

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